

Middle Term Task Lists

FEM-IB Debugging

Debugging Plan of 2nd FEM-IB in Taiwan

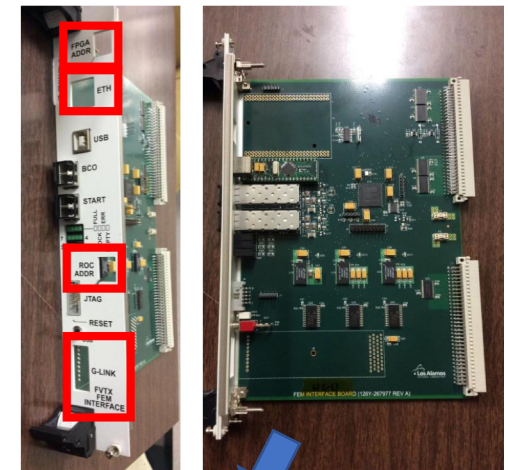
- Consulted with FVTX experts
- No one recall if this FEM-IB used to work, but no obvious reason of incompatibility with the standalone.
- Suggested to search for any record in DB and e-log (not available now).
- Suggested debugging procedure.
 - Whether you can program the FPGA?
 - Is the CLK/START it distributes looks OK?
 - Does it and its FEM respond to slow control command?
 - And you can run some test signal to debug pings which is usually very helpful.
- The FEM-IB is to be debugged at NWU or BNL once institutes are resumed normal operation.

bad FEM IB 1

Things not attached

(In the test at NWU, we didn't use any NWU's things for below places.)

- FPGA ADDR
- ETH
- ROC ADDR
- G-LINK



FEM INTERFACE BOARD (126Y-267977 REV A)

FVTX Electronics database

FEM Interface Boards

ID	soft ID	assembly	power up	FPGA prog.	fiber comm.	links ¹	location	status
1 H		MB 2011-06-15 Done -> OK	2011-07-21 Done -> OK	MLB 2011-07-21 Done -> OK code: v0.01Jan10	xxx 2011-07-21 slow: Done -> OK data: not yet done	(none)		entry clobbered final ok
2 H		Done -> OK	2011-07-21 Done -> OK	MLB 2011-07-21 Done -> OK code: v0.01Jan10	xxx 2011-07-21 slow: Done -> OK data: not yet done	(none)	100B	entry clobbered final ok
3 H	1	SB 2011-07-18 Done -> OK	SB 2011-07-18 Done -> OK	SB 2011-07-18 Done -> OK code: v0.01Jan10	SB 2011-07-18 slow: Done -> OK data: not yet done		100B	Sent to BNL for Martin DAQ tests
4 H	2	SB 2011-07-19 Done -> OK	SB 2011-07-19 Done -> OK	SB 2011-07-19 Done -> OK code: v0.01Jan10	SB 2011-07-19 slow: Done -> OK data: not yet done		UNM	All ok
5 H	3	SB 2011-08-03 Done -> OK	SB 2011-08-03 Done -> OK	SB 2011-08-03 Done -> OK code: v0.01Jan10	SB 2011-08-03 slow: Done -> OK data: not yet done		UNM	All ok
6 H	4	SB 2011-08-03 Done -> OK	SB 2011-08-03 Done -> OK	SB 2011-08-03 Done -> OK code: v0.01Jan10	SB 2011-08-03 slow: Done -> OK data: not yet done		UNM	OK Had issue of programming from EEPROM at first, but seem to have recovered. Some pins on J5 had been bent and shorted, this may be possible reason

¹Numbers in brackets [nnn] link to elog entries.

[SUBMIT to Data Base](#)

<https://www.phenix.bnl.gov/WWW/p/draft/fvtx/WedgeAssembly/Database/daqtest.php?from=0>

INTT GEANT Model

Present Status

- Takahito completed INTT GEANT model modification.
 - Updated material budget of Stave and HDI
 - Reorganized the codes to avoid scattered geometry parameters here and there. Now the parameters are gathered in one program.
 - Kick start instruction is available in wiki:
https://wiki.bnl.gov/sPHENIX/index.php/INTT_GEANT_model
 - The developer is succeeded to Genki. Takahito now works for Tsukuba University.
 - Itaru will report the modification to the tracking group once he confirm the change.

Material Budget Before/After

	Thickness [mm]	X/X0 [%]
Silicon Sensor	0.32	0.34
HDI	0.473	0.49
Stave	0.4	0.25
PGS	0.2	
Total		1.08



	Thickness [mm]	X/X0 [%]
Silicon Sensor	0.32	0.34
HDI	0.473	0.39
Stave	0.6	0.33
Total		1.06

- Stave thickness is increased by 200um though, the radiation length is compensated by decreased HDI material.
- Copper layer HDI GEANT Model was 52um (as of Feb.14,2020), to be updated to 37.6um